

In the claims:

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1. A method for defining a virtual domain in an electronic messaging system, comprising:  
5 defining a virtual domain node corresponding to a real domain name server in a hierarchically organized directory; and  
associating a plurality of virtual domain attributes to the virtual domain node.

2. A method as recited in claim 1, wherein the plurality of virtual domain  
10 attributes include a designated virtual domain administrator, a designated virtual domain postmaster, a state of the virtual domain, and a set of allowed services for the virtual domain.

3. A method as recited in claim 2, wherein the state of the virtual domain  
15 node is selected from the list comprising: active, inactive (or suspended), and deleted.

4. A method as recited in claim 3, wherein the hierarchically organized  
directory is a tree based hierarchy.

20 5. A method as recited in claim 4, wherein the tree based hierarchy is a standard based directory information tree (DIT) that includes a plurality of directory entries each of which is associated with a higher level (parent) directory entry.

25 6. A method as recited in claim 5, wherein the directory takes the form of a segmented name space.

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7. A method as recited in claim 6, wherein the segmented name space includes a segmented name associated with a user that is segmented in such a way that the user is uniquely identified by a unique user name at a first hierarchical level and an associated domain name at a higher hierarchical level.

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8. A method as recited in claim 7, wherein during a user name search operation, the user name is initially resolved at the higher hierarchical level and subsequently at the first hierarchical level such that in a multi-domain environment the search operation is performed as if the user name was part of a flat name space.

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9. A method as recited in claim 8 further comprising:  
defining a routing table based upon the segmented name space, wherein the routing table is used by a transfer agent to direct an appropriately addressed email message to a receiving user in the virtual domain.

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10. A method as recited in claim 9, wherein the segmented name space is based upon the most direct path from the user name to the highest connected hierarchical level in the directory.

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11. A method as recited in claim 1, wherein the electronic messaging system is an email messaging system.

12. A method as recited in claim 1, wherein the electronic messaging system is a voicemail messaging system.

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13. A method as recited in claim 10, wherein the standard based directory is an LDAP based directory.

14. A computer-readable medium containing programming instructions for  
5 defining a virtual domain in an electronic messaging system, the computer-readable medium comprising computer program code devices configured to cause a computer to execute the operations of:

defining a virtual domain node corresponding to a real (non-virtual) domain in a hierarchically organized directory; and

10 associating a plurality of virtual domain attributes to the virtual domain node.

15 15. A computer-readable medium containing programming instructions for defining a virtual domain in an electronic messaging system as recited in claim 10, wherein the plurality of virtual domain attributes include a designated virtual domain administrator, a designated virtual domain postmaster, a state of the virtual domain, and a set of allowed services for the virtual domain and wherein the state of the virtual domain node is selected from the list comprising: active, inactive (or suspended), and deleted.

20 16. A computer-readable medium containing programming instructions for defining a virtual domain in an electronic messaging system as recited in claim 15, the computer-readable medium further comprising computer program code devices configured to cause a computer to execute the operations of:

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defining a routing table based upon the segmented name space, wherein the routing table is used by a transfer agent to direct an appropriately addressed email message to a receiving user in the virtual domain.

- 5            17.     A computer-readable medium containing programming instructions for defining a virtual domain in an electronic messaging system as recited in claim 16, the computer-readable medium further comprising computer program code devices configured to cause a computer to execute the operations of:

10                    initially resolving a user name during a user name search operation at the higher hierarchical level and subsequently at the first hierarchical level such that in a multi-domain environment the search operation is performed as if the user name was part of a flat name space.

- 15            18.     An electronic messaging system having a main host computer for transferring an incoming message between a sending subscriber and a receiving subscriber having an associated unique user name, comprising:

20                    a messaging server coupled to the host computer arranged to receive the incoming message from the sending subscriber and arranged to forward the message to the receiving subscriber based upon the receiving subscriber's user name;  
                      a hierarchically organized directory coupled to the messaging server arranged to define a virtual domain node corresponding to a real (non-virtual) domain having associated with it a plurality of virtual domain attributes to the virtual domain node.

- 25            19.     An electronic messaging system as recited in claim 18, wherein the plurality of virtual domain attributes include a designated virtual domain administrator, a

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designated virtual domain postmaster, a state of the virtual domain, and a set of allowed services for the virtual domain:

20. An electronic messaging system as recited in claim 19, wherein the state  
5 of the virtual domain node is selected from the list comprising: active, inactive (or suspended), and deleted.

21. An electronic messaging system as recited in claim 20, wherein the  
hierarchically organized directory is an LDAP based directory information tree (DIT)  
10 that includes a plurality of directory entries each of which is associated with a higher level (parent) directory entry and wherein the directory takes the form of a segmented name space.

22. An electronic messaging system as recited in claim 21, wherein the user  
15 name is segmented in such a way that the user is uniquely identified by a unique userid at a first hierarchical level and an associated domain name at a higher hierarchical level.

23. An electronic messaging system as recited in claim 22, wherein in order  
for the messaging server to forward the email message to the receiving subscriber, the  
20 messaging server executes a user name search operation.

24. An electronic messaging system as recited in claim 23, wherein the user  
name search operation comprises:

initially resolving the user name at a highest hierarchical level and subsequently  
25 at a lowest hierarchical level in such a way that when the name search operation is

executed in a multi-domain environment, the search operation is performed as if the user name was part of a flat name space.

5 messaging server further includes:

a routing table defined by the directory based upon the resolved receiving subscriber's user name that defines a path by which the email message is passed from the sending subscriber to the receiving subscriber; and

10 a transfer agent arranged to direct the email message from the sending subscriber  
to the receiving subscriber as defined by the routing table.

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	